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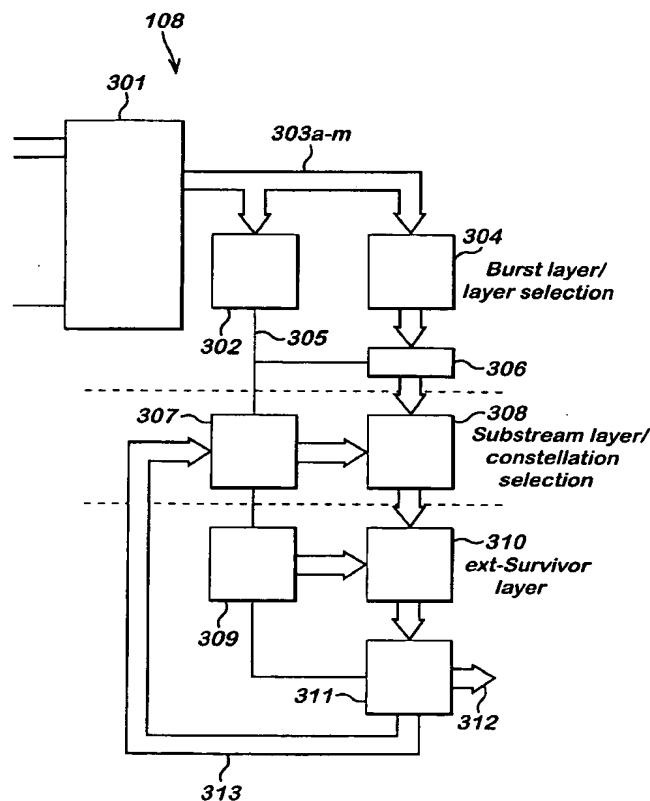
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[Continued on next page]

(54) Title: RECEIVING AND RECEIVER FOR RECEPTION OF A COMPOSITE SIGNAL



(57) Abstract: A receiver for receiving a plurality of signals at the same time, said receiver comprising: a plurality of receiving elements each of which is arranged to receive a composite signal including at least some of said plurality of signals; processing means for providing an estimate of at least two of said plurality of signals, said processing means being arranged to provide an estimate of a first one of said signals and then to provide an estimate of a second one of said signals, wherein said estimate of said second one of said signals takes into account the estimate of the first signal and the estimate of the first signal can be modified in dependence on the estimate of the second signal.

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INTERNATIONAL SEARCH REPORT

International application-No..
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A. CLASSIFICATION OF SUBJECT MATTER

IPC7: H04B 7/08

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7: H04B, H04L, H04Q

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPI-DATA, EPO-INTERNAL, INSPEC

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	WO 0052845 A1 (THE BOARD OF TRUSTREES, LELAND STANFORD JUNIOR UNIVERSITY), 8 Sept 2000 (08.09.00), page 22, line 12 - page 23, line 6; page 11, line 1 - line 10; page 14, line 13 - page 15, line 14, figures 3,7, abstract --	1-39
A	EP 1069722 A2 (HUGHES ELECTRONICS CORPORATION), 17 January 2001 (17.01.01), page 9, line 31 - line 39, figure 4 --	1-39

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 2001022820 A1 (QIN ZHENGDI ET AL.), 20 Sept 2001 (20.09.01), abstract; sections 0004-0016 -----	1-39

INTERNATIONAL SEARCH REPORT
Information on patent family members

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Patent document cited in search report		Publication date		Patent family member(s)		Publication date
WO	0052845	A1	08/09/00	AU	3614500 A	21/09/00
EP	1069722	A2	17/01/01	NONE		
US	2001022820	A1	20/09/01	AU	8804698 A	17/01/00
				AU	9739998 A	17/01/00
				CN	1307773 T	08/08/01
				EP	1092304 A	18/04/01
				NO	20006677 A	28/02/01
				WO	0001124 A	06/01/00
				WO	0001125 A	06/01/00